

## **CLAIMS**

1. A method for reading data from a memory card that provides non-volatile data storage, said method comprising:

5 (a) accessing volume information from a first volume of non-volatile data storage of the memory card;

(b) determining whether one or multiple volumes are present on the memory card based on the volume information;

10 (c) operating the memory card as providing only the first volume when said determining (b) determines that one volume is present on the memory card, the non-volatile data storage of the memory card being assigned to the one volume; and

15 (d) operating the memory card as providing a plurality of volumes when said determining (b) determines that multiple volumes are present on the memory card, one of the plurality of volumes being the first volume, and the non-volatile data storage being divided amongst the plurality of volumes.

2. A method as recited in claim 1,

20 wherein the memory card includes a switch that has a plurality of switch positions, and

wherein said operating (d) includes at least:

(d1) determining a switch position for the switch; and

(d2) selectively enabling one of the plurality of volumes based on the switch position.

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3. A method as recited in claim 2,

wherein the switch has at least a first position and a second position, and

wherein said operating (d) further includes at least:

30 (d3) imposing an address offset when the switch is in the second position.

4. A method as recited in claim 3, wherein the address offset enables the memory card to provide more data storage capacity than available with a file system using 16-bit addressing.
- 5 5. A method as recited in claim 2,  
wherein the switch has at least a first position and a second position,  
wherein, when the switch position is in the first position and the  
memory card is operated as providing the plurality of volumes, the first volume  
of the non-volatile data storage is accessed, and  
10 wherein, when the switch position is in the second position and the  
memory card is operated as providing the plurality of volumes, a second  
volume of the non-volatile data storage is accessed.
6. A method as recited in claim 5, wherein the memory card is formatted  
15 into either one of a single volume or a pair of volumes, the pair of volumes  
being the first volume and the second volume.
7. A method as recited in claim 6, wherein the total non-volatile data  
storage for the memory card is formatted into the first volume of X gigabytes  
20 as the single volume, or formatted into the first and second volumes of X/2  
gigabytes each as the pair of volumes.
8. A method as recited in claim 1, wherein said method further comprises:  
(e) detecting activation of the memory card, and  
25 wherein said accessing (a), said determining (b), and said operating (c)  
or (d) are performed once said detecting (e) detects the activation of the  
memory card.
9. A method as recited in claim 8, wherein the activation of the memory  
30 card occurs upon power-on of the memory card or upon insertion of the  
memory card into a host device.

10. A method as recited in claim 1,  
wherein the memory card is formatted into a single volume or a  
plurality of volumes, and

wherein the total non-volatile data storage for the memory card is  
5 formatted into the first volume of X gigabytes as the single volume, or  
formatted into the N volumes of X/N gigabytes each as the plurality of  
volumes.

11. A method as recited in claim 1, when said determining (b) determines  
10 that one volume is present on the memory card, the first volume having a  
FAT-32 file format.

12. A method as recited in claim 1, when said determining (b) determines  
that multiple volumes are present on the memory card, each of the multiple  
15 volumes having a FAT-16 file format.

13. A memory card capable of being configured as a single partition of a  
first size or as multiple partitions of a second size, said memory card  
comprising:

20 non-volatile data storage that provides data storage, said non-volatile  
data storage being configured to include at least a first partition and to store  
partition information describing at least the first partition;

a switch being set in one of a plurality of switch positions; and

a controller that manages access to the data stored in said non-volatile  
25 data storage,

wherein said controller examines the partition information stored in said  
non-volatile data storage to determine whether the single partition or the  
multiple partitions are being used based on the partition information,

wherein when said controller determines that the single partition is  
30 used, said non-volatile data storage is addressed as a single volume, and

wherein when said controller determines that the multiple partitions are  
being used, said non-volatile data storage is addressed as multiple partitions  
based on the switch position of said switch.

14. A memory card as recited in claim 13, wherein the one or more partitions are volumes.

5 15. A memory card as recited in claim 13, wherein when said controller determines that the single partition is being used on said memory card, the single partition has a FAT-32 file format.

10 16. A memory card as recited in claim 13, wherein when said controller determines that the multiple partitions are being used, each of the multiple partitions has a FAT-16 file format.

17. A memory card as recited in claim 13,  
wherein said memory card is formatted into either a single partition or a plurality of partitions, and  
15 wherein the total non-volatile data storage for said memory card is formatted to a first partition of X gigabytes as the single partition, or formatted into the N partitions of X/N gigabytes each as the plurality of partitions.

20 18. A memory card as recited in claim 13, wherein said memory card is a FLASH memory device.

19. A memory device that provides non-volatile data storage, said memory device comprising:

25 means for accessing volume information from a first volume of non-volatile data storage of said memory device;

means for determining whether one or multiple volumes are present on said memory device based on the volume information; and

30 means for operating said memory card based on a configuration of said memory device into the one or multiple volumes that said means for determining determines to be present on said memory device.

20. A memory device as recited in claim 19,  
wherein said means for operating operates said memory device in a  
first mode when said means for determining determines that one volume is  
present on said memory device, and

5 wherein said means for operating operates said memory device in a  
second mode when said means for determining determines that multiple  
volumes are present on said memory device.

21. A memory device as recited in claim 20, wherein said memory device  
10 further comprises a switch means that permits user selection of one of the first  
mode and the second mode.

22. A memory device as recited in claim 19, wherein said means for  
operating operates said memory device as providing only the first volume  
15 when said means for determining determines that one volume is present on  
said memory device.

23. A memory device as recited in claim 19, wherein said means for  
operating operates said memory device as providing a plurality of volumes  
20 when said means for determining determines that multiple volumes are  
present on said memory device, one of the plurality of volumes being the first  
volume, and the non-volatile data storage being divided amongst the plurality  
of volumes.

25 24. A memory device as recited in claim 19, wherein said memory device  
is a memory card.

25. A memory device as recited in claim 19, wherein said memory device  
is a FLASH memory device.

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26. A method for reading data from a memory card that provides non-  
volatile data storage, said method comprising:

(a) accessing a switch position of a switch on the memory card;

(b) determining whether one or multiple volumes are present on the memory card based on the switch position;

(c) operating the memory card as providing only the first volume when said determining (b) determines that one volume is present on the memory card, the non-volatile data storage of the memory card being assigned to the one volume; and

(d) operating the memory card as providing a plurality of volumes when said determining (b) determines that multiple volumes are present on the memory card, one of the plurality of volumes being the first volume, and the non-volatile data storage being divided amongst the plurality of volumes.

27. A method as recited in claim 26, wherein the switch has three-positions.

28. A memory card capable of being configured as a single partition of a first size or as multiple partitions of a second size, said memory card comprising:

non-volatile data storage that provides data storage, said non-volatile data storage being configured to include at least a first partition and to store partition information describing at least the first partition;

a switch being set in one of a plurality of switch positions; and

a controller that manages access to the data stored in said non-volatile data storage,

wherein said controller examines the switch position of said switch to determine whether the single partition or the multiple partitions are being used based on the partition information,

wherein when said controller determines that the single partition is used, said non-volatile data storage is addressed as a single volume, and

wherein when said controller determines that the multiple partitions are being used, said non-volatile data storage is addressed as multiple partitions based on the switch position of said switch.

29. A memory card as recited in claim 28, wherein the one or more partitions are volumes.
30. A memory card as recited in claim 28, wherein when said controller  
5 determines that the single partition is being used on said memory card, the single partition has a FAT-32 file format.
31. A memory card as recited in claim 28, wherein when said controller  
10 determines that the multiple partitions are being used, each of the multiple partitions has a FAT-16 file format.
32. A memory card as recited in claim 28,  
wherein said memory card is formatted into either a single partition or a plurality of partitions, and  
15 wherein the total non-volatile data storage for said memory card is formatted to a first partition of X gigabytes as the single partition, or formatted into the N partitions of X/N gigabytes each as the plurality of partitions.
33. A memory card as recited in claim 32, wherein said switch has N+1  
20 switch positions.
34. A memory card as recited in claim 28, wherein said memory card is a FLASH memory device.
- 25 35. A memory card as recited in claim 32, wherein said switch has three switch positions.